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I preserved some Plants with their natural Earth, and brought them to *London* alive; and I observed the remarkable Change produced by the Sun's Heat on them; for the saline Matter in *Greenland*, which certainly was analogous to a fix'd Salt, became, in a Month's time, almost to the same Volatility as that which naturally grows in *England*.

This I make mention of, in case other Gentlemen, who have had the same Opportunity, have been remiss in their Curiosity.

David Nicolson.

VI. *A Letter from Edmund Stone, F. R. S. to ——— concerning two Species of Lines of the Third Order, not mentioned by Sir Isaac Newton, nor Mr. Sterling.*

SIR,

July 31. 1736.

HAVING for some time past been reading and considering the little Treatise of Sir *Isaac Newton*, intituled, *Enumeratio Linearum tertii Ordinis*, as also the ingenious Piece of Mr. *Sterling*, called, *Illustratio Tractatus Domini Newtoni Linearum tertii Ordinis*; I have observed, that they have neither of them taken Notice of the two following Species of Lines of the Third Order; and venture to affirm, that the Seventy-two Species mentioned by Sir *Isaac*, together with the Four more of Mr. *Sterling*, and these Two, making in all Seventy-eight, is the exact Number of the different Species of

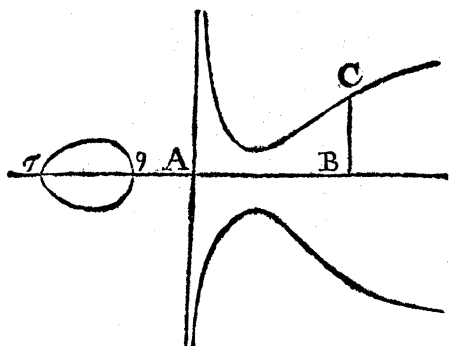
of the Lines of the Third Order, according to what Sir *Isaac* has thought fit to constitute a different Species.

The two Species I mean, are to be reckoned amongst the Hyperbolo-parabolical Curves, having one Diameter, and one Asymptote, at N^o. 8. of *Newton's Treatise*, or Page 104. of Mr. *Sterling's*; whose Equation is $xyy = \pm bx^2 \pm cx \pm d$; which will give, not Four, as in these Authors, but Six Species of these Curves: For,

I. If the Equation $bx^2 \pm cx + d = 0$, has two impossible Roots, the Equation $xyy = bx^2 \pm cx + d$, will (as they say) give two Hyperbolo-parabolical Figures equally distant on each side the Diameter *AB*. See the 57th Figure in *Newton's Treatise*, and this is his 53d Species, and *Sterling's* 57th.

II. If the Equation $bx^2 - cx + d = 0$, has two equal Roots both with the Sign $+$; the Equation $xyy = bx^2 - cx + d$, will (as they say) give two Hyperbolo-parabolical Curves crossing each other at the Point τ in the Diameter. See Fig. the 58th in *Newton*; and this is his 54th Species, and *Sterling's* 58th.

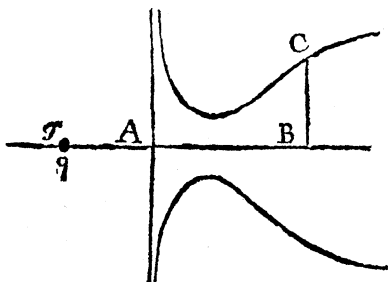
III. But if the Equation $bx^2 + cx + d = 0$, has two possible unequal negative Roots A_p and A_τ , the Curve given by the Equation $xyy = \pm bx^2 + cx + d$, will consist of two Hyperbolo-pa-



rabolical

rabolical Parts, as also of an Oval on the contrary Side the Asymptote or principal Absciss. And this is one of the Species omitted by Sir *Isaac* and Mr. *Sterling*, which is really the 59th Species.

IV. Also if the Equation $bx^2 + cx + d = 0$, has two equal negative Roots A_p and A_τ ; the Curve given by the Equation $xyy = \pm bx + cx + d$, will consist of two Hyperbolo-parabolical Parts, and also of a Conjugate



Point on the contrary Side the Asymptote or principal Ordinate: And this is the other Species of these Curves omitted by Sir *Isaac* and Mr. *Sterling*, which is really the 60th Species.

V. If the Roots of the Equation $bx^2 - cx + d = 0$, are real, and unequal, having both the Sign $+$; the Curve given by the Equation $xyy = bx^2 - cx + d$, will (as they say) consist of a conchoidal Hyperbola and a Parabola, on the same Side the Asymptote or principal Ordinate. See Fig. the 59th in *Newton*; and this is really the 61st Species.

VI. If the Roots of the Equation $bx^2 + cx - d = 0$, have contrary Signs, the Equation $xyy = bx^2 + cx - d$, will (as they say) give a conchoidal Hyperbola with a Parabola on the contrary Side the Asymptote or principal Ordinate. See Fig. the 60th in *Newton*; and this is really the 62d Species. I remain

Your humble Servant,

Edmund Stone.

VII. *An*